



ES1561
User Information

This document contains technical data and connection details for the ESLNX ES1561 Show Control Module. Blank tables are also included on which to record connection and usage details for the Serial Outputs, Relay Outputs and Switch Inputs.

For more detailed information, including the setting-up of internal parameters, please refer to the ESLNX User Guide (part no. ES1561/M) which is available separately from your distributor.

Project Details

Client	
Tel. No.	
Project Name	
Project Ref.	
No. of Units	

Serial Output/Player Allocation

Output Number	Player Name/Ref.	Type/Baud Rate
SERIAL 1		
SERIAL 2		

Relay Output Allocation

Project Ref.: _____

Relay No.		Pin No.	Relay Contact	Allocation or Function	Cable Ref.
Unit	System				
1		12	NO		
		31	NC		
		13	Common		
2		29	NO		
		11	NC		
		30	Common		
3		9	NO		
		29	NC		
		10	Common		
4		26	NO		
		8	NC		
		27	Common		
5		6	NO		
		25	NC		
		7	Common		
6		23	NO		
		5	NC		
		24	Common		
7		3	NO		
		22	NC		
		4	Common		
8		20	NO		
		2	NC		
		21	Common		
—		1	0 Volts		
—		19	+12 Volts		

NO = Normally Open; **NC** = Normally Closed. (Note: All contacts are volt-free.)

Switch Input Allocation

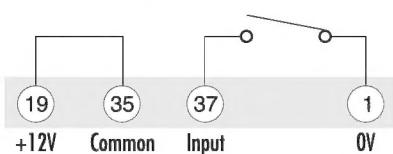
Project Ref.: _____

Input No.		Pin No.	Pin Function	Allocation or Function	Cable Ref.
Unit	System				
1		37	Input		
		35	Common		
2		18	Input		
		35	Common		
3		36	Input		
		35	Common		
4		17	Input		
		35	Common		
5		16	Input		
		15	Common		
6		34	Input		
		15	Common		
7		33	Input		
		32	Common		
8		14	Input		
		32	Common		
—		1	0 Volts		
—		19	+12 Volts		

IMPORTANT NOTE

All switch inputs are opto-isolated — see diagram for example method of connection. Common 1,2,3 & 4 are internally linked to pin 35, Common 5 & 6 are internally linked to pin 15, and Common 7 & 8 are internally linked to pin 32.)

Example method for using SW9 input



Application & Show Details

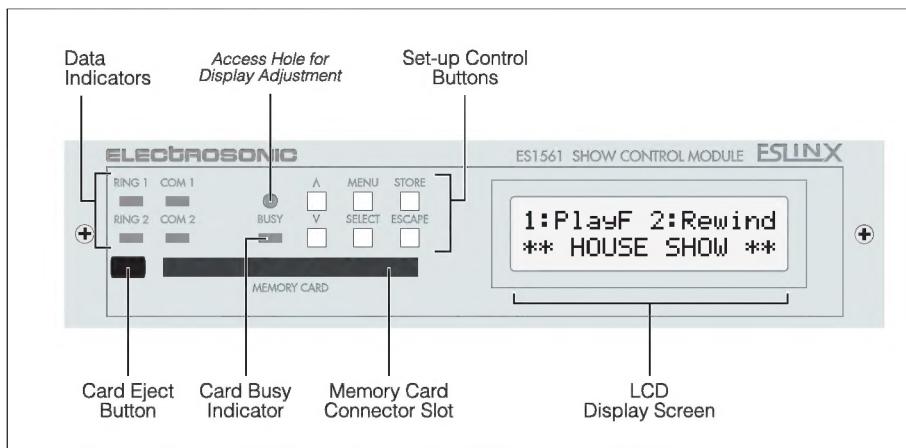
Project Ref.: _____

Application Program			Version					
Flash Card Size	<input type="checkbox"/>	2Mb	<input type="checkbox"/>	4Mb	<input type="checkbox"/>	10Mb	<input type="checkbox"/>	20Mb
Card Programmed By				Date				

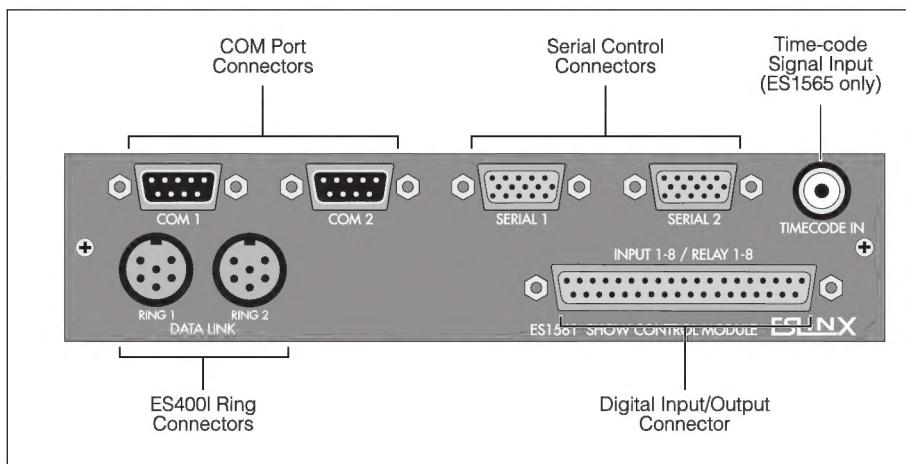
Internal Sequences

No.	Description	No.	Description
1		10	
2		11	
3		12	
4		13	
5		14	
6		15	
7		16	
8		17	
9		Seq.17 Auto-start: <input type="checkbox"/> YES <input type="checkbox"/> NO	

Front Panel Features



Back Panel Connectors



General Description

The ES1561 Show Control Module incorporates a dedicated show computer which is capable of running shows produced by any of Electrosonic's application programs which use the ES4000 protocol (*e.g. Cthrough+Plus, EASY+ and BSC*). Two RS-232 'rings' are provided for the connection of additional ESLINX or ESTA II modules, or other ES4000-compatible devices

Two serial outputs are provided for the remote control of external equipment. Various down-loadable serial drivers are included which are suitable for controlling a wide variety of equipment, such as Video Disc Players, Video/Audio Tape Players and CD Players (see User Guide for details). In addition, the module offers eight internal relays which can be employed for any user-defined low-voltage application.

Physical Details (module only)

Overall Dimensions: 177.0mm (W) x 288.0mm (D) x 40.5mm (H)

Weight: 0.5kg.

Operating Conditions: Ambient temperature: 10 to 30C.
Ambient humidity (max): 80% non-condensing.

Power Requirements

The ES1561 is designed to be installed in (and powered by) an ES1520, ES1550 or ES1560 enclosure. A suitable cable assembly is provided with the enclosure for connecting the module to the power supply.

Supply Voltages: +5Vd.c. @ 1A;
+24Vd.c. @ 70 to 170mA; } *max. current depends*
- 12Vd.c. @ 10 to 110mA. } *on loading of ±12V lines*

Mating Connector: 6-pin (0.156" pitch) Molex® (5180 series).

Connection Detail:

1	+24V d.c.
2	+5V d.c. } <i>pins linked internally</i>
3	+5V d.c. } <i>pins linked internally</i>
4	0V ground } <i>pins linked internally</i>
5	0V ground } <i>pins linked internally</i>
6	-12V d.c.

Control Panel Overview

^ & \vee Buttons Move up or down through menu, parameter and option lists.

MENU Button Move to next menu.

ESCAPE Button Move back one level in the menu hierarchy. Repeated presses will return the display to the Player Status mode.

SELECT Button Move to a sub-menu or parameter list. Also 'selects' a parameter from a list to enable a new option to be chosen.

STORE Button Saves a new parameter option to the internal memory.

MENU LIST & SUB MENUS	PARAMETERS	OPTIONS
Player Status	<i>Shows last commands sent to Serial Outputs.</i>	
Player Setup Player 1 - 2	Driver Type: Baud Rate: Data Bits: Parity: Communications Type: Disk Type: Video Standard:	Various. 1200, 2400, 4800, 9600, 19200, 38400, 57600, 76800, 115200, Special. 8, 7, 6, 5. None, Odd, Even. RS-232, RS-422, RS-485, IR. CAV, CLV. PAL, NTSC.
Player Control Player 1 - 2		Index On, Index Off, PlayF, PlayR, Still, Ffwd, Rewind, Plyr/Flt Rst.
Input Setup Input 1 - 8	Show: Def Seq: Polarity: Override:	None, SHOW nn , EFFECT nn . None, nn . Normal, Reverse. None, Off, On.
Output Setup Output 1 - 8		Override: None, Off, On.
Sequence Setup	<i>Allows viewing of internal sequence cues.</i>	

MENU LIST & SUB MENUS	PARAMETERS	OPTIONS
Parameter Setup	Address: Start Delay: Baud: Players: Relays: Show/Efct: Language:	01 to 24. None, 5s, 15s, 30s. 19200, 38400, 57600, 76800, 115200. 01–04 to 21–24 01–08 to 89–96 01–08 to 56–64 English, Symbols.
Diagnostic View	<i>Allows viewing of Error/Diagnostic codes with \wedge & \vee buttons; press SELECT button to clear a code.</i>	
Manual Starts		Start Show <i>nn</i> , Start Effect <i>nn</i> , Start Sequence <i>nn</i> .

RING Indicators Pulse *green* when a valid RS-232 command (ES4000 protocol) is being transmitted via RING connectors.

RING 1 indicator only pulses *red* when new set-up parameters are being saved to the internal memory.

Remain *off* at all other times.

BUSY Indicator Shows *red/orange* when data is being written to or read from the Memory Card – do not remove the card when lit.

Shows *green* when the Memory Card is write-protected.

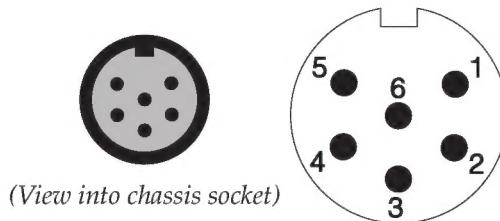
LCD Display

This is used to display the various set-up menus/options. In addition, user-defined messages can be displayed by an Application Program (using SU-type transmittable comments), or by an Internal Sequence (using the Four Disc Controller software utility – see page 16).

The LCD display is factory-set for optimum contrast. After a period of time, this may need to be adjusted slightly by fine-tuning a small preset resistor (accessible through the hole in the front panel). To adjust the contrast, use an insulated trimmer adjusting tool (not a metal screwdriver) to turn the preset.

ES4000 Ring Connectors (RING 1 & RING 2)

These two connectors are used for RS-232 remote control applications using the Electrosonic ES4000 protocol. For more details on ES4000 ring usage, please refer to the ESLINK User Guide (part no. ES1561/M).



Mating Connector: 6-pin DIN (male).

Pin-out Details:

- 1 RS-232 data in (bus master RX).
- 2 +12V supply (*limited to 100mA*).
- 3 Reserved.
- 4 -12V supply (*limited to -100mA*).
- 5 RS-232 data out (bus master TX).
- 6 Ground (0V).

Casing = Screen.

Recommended Cable: 6-core plus overall screen;
Capacitance must be $<0.22\text{mm}^2$ per core.

Max. Cable Length: 50m (*total length of ring*).

Control Protocol (RS-232): Electrosonic ES4000 (*transmitted message types dependent on application program*).

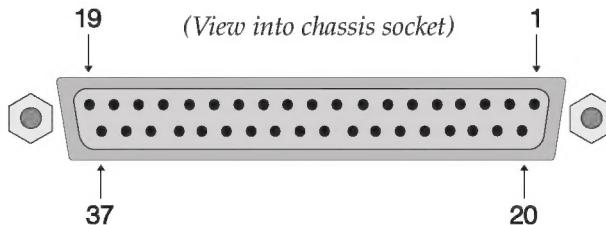
Max. Number of Nodes: 24 (*subject to application*).

IMPORTANT NOTE

When the cable is to be used to connect between two modules mounted in an ES1560 Twin Module Case, a ferrite bead must be fitted near to the plug at both ends of the cable.

Digital I/O Connector (INPUT 1-8 / RELAY 1-8)

This connector provides access to the eight switch-control inputs and also to the contacts of the eight internal relays. In addition, a 12V supply (internally limited to 100mA) and 0V connection are provided for use with the switch inputs.



Mating Connector: 37-pin D-type (male) with metal cover.

Pin-out Details:

1	Ground 0V.	20	Relay 8-NO.
2	Relay 8-NC.	21	Relay 8-Com.
3	Relay 7-NO.	22	Relay 7-NC.
4	Relay 7-Com.	23	Relay 6-NO.
5	Relay 6-NC.	24	Relay 6-Com.
6	Relay 5-NO.	25	Relay 5-NC.
7	Relay 5-Com.	26	Relay 4-NO.
8	Relay 4-NC.	27	Relay 4-Com.
9	Relay 3-NO.	28	Relay 3-NC.
10	Relay 3-Com.	29	Relay 2-NO.
11	Relay 2-NC.	30	Relay 2-Com.
12	Relay 1-NO.	31	Relay 1-NC.
13	Relay 1-Com.	32	SW7 & 8 Com.
14	SW8 Input.	33	SW7 Input.
15	SW5 & 6 Com.	34	SW6 Input.
16	SW5 Input.	35	SW1, 2, 3, 4 Com.
17	SW4 Input.	36	SW3 Input.
18	SW2 Input.	37	SW1 Input.
19	12V @ 100mA.		Cover = Screen.

SWITCH-CONTROL INPUTS:

Input Type: Opto-isolated (bi-directional).

Nominal Input Voltage: +12V (*w.r.t. SW Com connection*).

Absolute Input Range: $\pm 5V$ to $\pm 24V$.

Input Current: 15mA @ 12V (*limited by internal 680Ω resistor*).

Input Response (Polarity): Active-low (*default*); Active-high (*user set-up*)

Debounce Delay: 10 milliseconds (approx.).

NOTE *The opto-isolators are bi-directional to allow for common negative, common positive or a.c. systems.*

RELAY CONTACTS:

Contact Arrangement: Single-pole changeover.

Contact Rating: 24V a.c. @ 0.2A;
50V d.c. @ 0.2A.

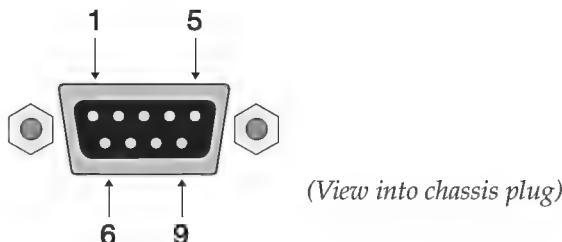
WARNING:

*These relay contacts are **not** safety isolated and are **not suitable for mains voltage operation.***

Serial Input Connectors (COM 1 & 2)

These connectors are used to link an external computer to the Show Control Module, for the purpose of show creation or editing. If the computer is fitted with an ES2005 or ES4325 Communications Card, connection is made to the card's (RING) outputs. If no card is fitted, the computer's serial (COM) ports are used.

When the ES1561 module is in 'Transparent Mod' (*i.e.* when the module is powered-up with no Memory Card) the COM 1 and COM 2 serial input connectors may be used to directly communicate with RING 1 and RING 2 respectively. This enables the system hardware to respond to the application program.



Mating Connector: 9-pin D-type (female) with metal cover.

Pin-out Details:

1	Data Carrier Detect
2	Receive Data
3	Transmit Data
4	Data Terminal Ready
5	Signal Ground
6	Data Set Ready
7	Request to Send
8	Clear to Send
9	Ring Indicator

Cover = Screen.

Computer Serial Cables

Various cables are available to allow connection between a computer and the ES1561 Show Control Module during show programming. The cables required depend on whether you are using an ES2005/ES4325 communications card or the computer's serial ports (see diagram below).

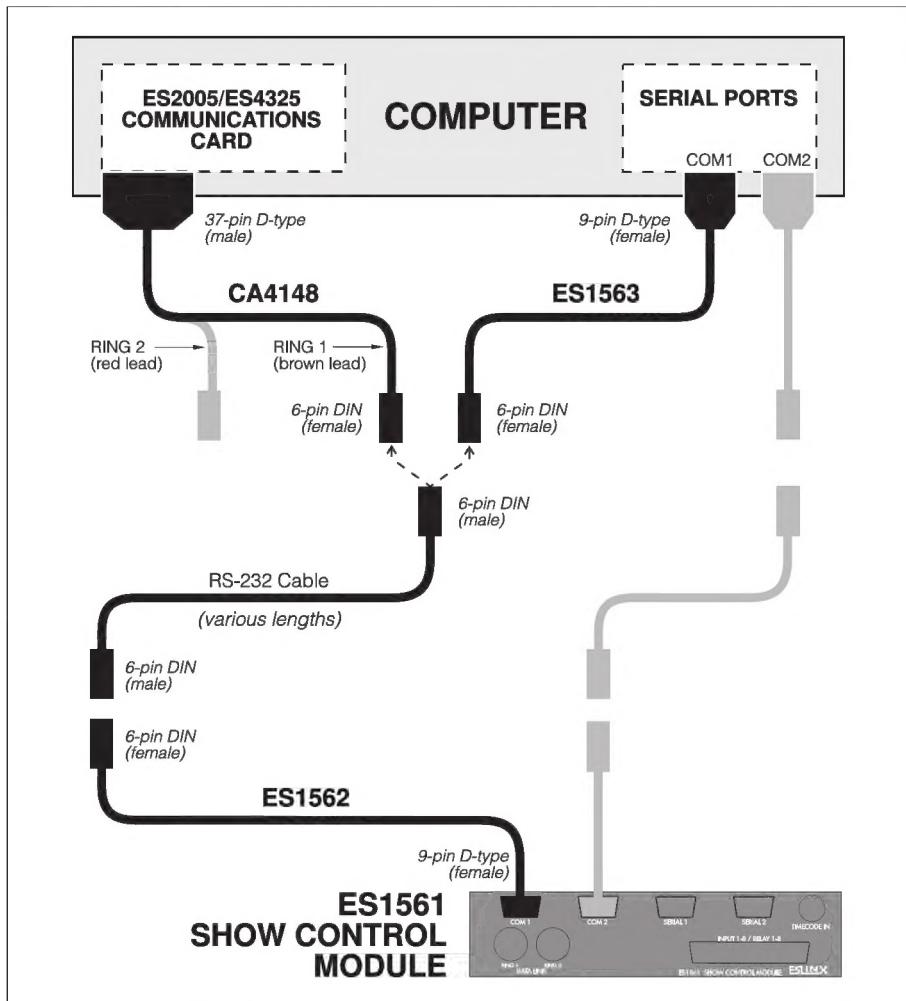
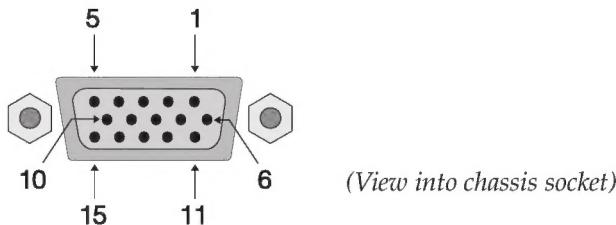


Fig.A-1: Cables and connections for computer link.

Serial Control Connectors (SERIAL 1 & 2)

These two connectors are functionally identical and are used to provide remote control of external devices such as Laser Disk Players or Video Tape Players, *etc.* Both outputs are configurable (via local set-up or ES4000 commands) to the appropriate device type with RS-232, RS-422, RS-485 or IR (Infra-red) standards.



Mating Connector: 15-pin 'High Density' D-type (male) with metal cover.

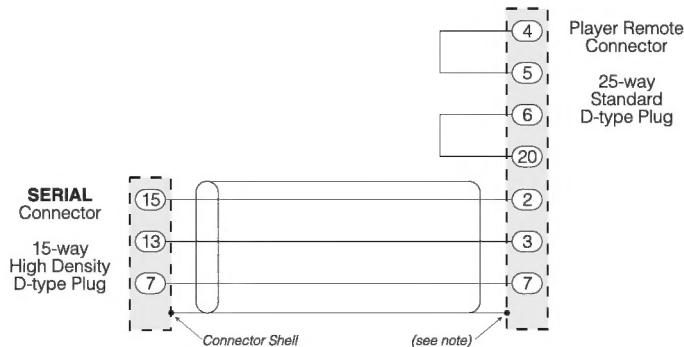
Pin-out Details:

- 1 RS-422 Tx B *or* RS-485 B.
- 2 RS-422 Tx A *or* RS-485 A.
- 3 IR Opto Emitter.
- 4 RS-422 Rx B.
- 5 RS-422 Rx A.
- 6 Ground (0V) }
- 7 Ground (0V) } *linked internally*
- 8 No connection.
- 9 +5V }
- 10 +5V } *linked internally* { *must be externally limited to < 1A.*
- 11 IR Opto Collector.
- 12 IR Diode Drive (anode) – *use with 0V (cathode).*
- 13 RS-232 Tx.
- 14 No connection.
- 15 RS-232 Rx.

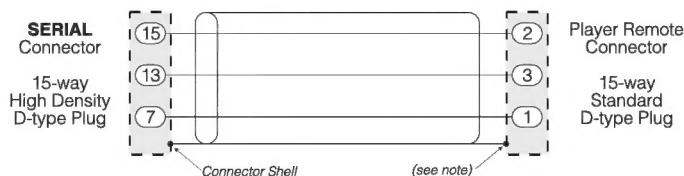
Cover = Screen.

Examples of Player Control Cables

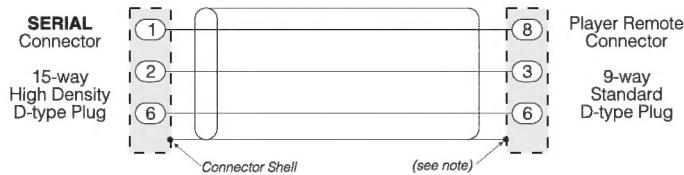
(a) RS-232 using Standard 25-way D-type Plug



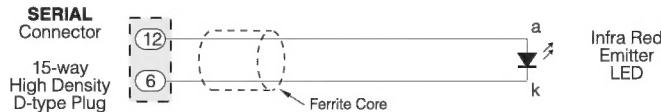
(b) RS-232 using Standard 15-way D-type Plug



(c) RS-422 using Standard 9-way D-type Plug



(d) IR (infra-red)



NOTE Check player operating manual for cover type and screen connection.

Flash Memory Cards

Available Types: 2Mb (*Electrosonic part no. P160*)
4Mb (*Electrosonic part no. P161*)
10Mb (*Electrosonic part no. P162*)
20Mb (*Electrosonic part no. P163*)

Operating Conditions: Ambient temperature: 0 to 65C.
Ambient humidity (max): 85% non-condensing.

Memory Type: Flash.

Memory Retention: >10 years (typically).

ESLNX Utilities Disk

The ESLNX Utilities Disk is a 3.5 inch floppy disk which contains the following software utilities for use with the ESLNX System:

- **Four Disc Controller PC Software (4DISC.EXE),**
used to program internal sequences on the ES1561 Module.
- **Serial Driver Programming Utility (DRVPROG.EXE),**
used to create and download new serial drivers for the ES1561 Module.
Copies of the current serial driver data files are also included.
- **Firmware Download Utility (AVDUMP.EXE),**
which allows updated Serial Processor firmware to be downloaded into
the ES1561 Module. A copy of the current Serial Processor firmware
data file is also included.

This disk is supplied with the following products (or separately on request from Electrosonic Ltd.):

- ES1530 Flash Card Read/Write Interface Kit
- ES1531 PCMCIA Flash Filing System
- ES4324 EASY+ Multi-Image Programming System.